

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World.

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 716. (No. 37, Vol. XIV.)

SEPTEMBER 14, 1922

Weekly, Price 6d.
Post free, 7d.

Flight,

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C. 2

Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free:

United Kingdom .. 30s. 4d. Abroad .. 33s. 6d.*

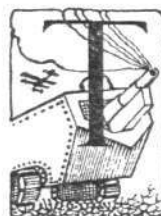
These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

* European subscriptions must be remitted in British currency

CONTENTS

	PAGE
Editorial Comment	
The Race for the King's Cup	523
Honouring the Schneider Cup Winner	524
Next Year's Schneider Cup	524
King's Cup Race	525
Gliding, Soaring and Air-Sailing	534
Airisms from the Four Winds	535
Boulton and Paul All-Metal Machine	535
London Terminal Aerodrome	536
Royal Air Force	537
Notices to Airmen	537
Personals	537
Society of Model Aeronautical Engineers	538
Side-Winds	538

EDITORIAL COMMENT.



The Race for the King's Cup

THE Circuit of Britain, the first since 1913, has been flown. Twenty-three machines were entered; twenty-one started, and eleven finished the course. This, in the briefest possible form, is the statistical account of the Race. And looked upon from the point of view of figures only the great race must be judged a failure. That one-half of the machines should have fallen by the way might certainly be used by the disbelievers in aviation as proof of the unreliability of modern flying. And just as certainly the critics would be wrong. The aviation community, now as in the early days of flying, is to be regarded as a band of pioneers. In 1909 or thereabouts they had to demonstrate to a doubting world that flying was possible. Today they are faced with the no less difficult task of proving to a sceptical world that flying is safe, that it is reliable and that it is commercially useful. But, above all, they are faced with the problem of persuading the world to take an interest in flying. Once that is accomplished, the way has been paved for infusing into the general public, the man in the street, a clearer understanding of the problems involved and a greater appreciation of the possibilities offered by vigorous and consistent development of flying. Viewed from this angle, the race for the King's Cup has been a great success, stimulating as it has the interest in flying, not only among Londoners, but all over the country. And after all, as some one pointed out at the Air Conference, although it is a fact that is sometimes apt to be overlooked, Britain does not consist of London only. The North, the Midlands and the West must each play their part if our future aviation policy is to be pursued with the vigour and determination which is necessary.

At all the turning points the public have crowded to the aerodromes in their thousands, and everywhere the enthusiasm has been tremendous. We have had our Aerial Derbys, our Schneider Cup races, our holiday race meetings at Waddon and our Aerial Pageant; but these have not, we are quite certain,

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

1922.

- Sept. 2-17.... International Concours Aviatique, Rotterdam
- Sept. Tyrrhenian Cup, Italy
- Sept. Italian Grand Prix
- Sept. or Oct. R.Ae.C. Race Meeting, at Waddon
- Sept. 30 Coupe Deutsch (800 kil.)
- Oct. 16-21 Daily Mail £1,000 Gliding Competition
- Dec. 15-
- Jan. 2 Paris Aero Exhibition

1923.

- June International Air Congress, London
- Dec. 1 Entries Close for French Aero Engine Competition

1924.

- Mar. 1 French Aero Engine Competition
- Mar. 15 Entries close for Dutch Height Indicator Competition

aroused such general and widespread interest as has the race for the King's Cup. Without personal, and fairly frequent, observation of flying, interest is apt to become somewhat lukewarm, even if total indifference does not result; but once have aeroplanes, numbers of them, flying over the head of the man in the street, and he would be a dullard indeed who could remain indifferent. And it is for reasons such as these that we have no hesitation in saying that the King's Cup Race has been a success, and for the same reasons we welcome most heartily the announcement that in the future the race will be an annual one, His Majesty having generously intimated his willingness to present another Cup next year, to be retained by the winner until the following year.

One fact stands out very clearly from the numerous minor mishaps: no single serious accident occurred during the whole of the race around a course of over 800 miles, and this in spite of the fact that the machines which took part were of a great variety of types and ages, ranging in size from small single-seaters of 35 h.p. to twin-engined bombers and large passenger-carrying commercial aeroplanes, and in ages from five years to a few months. Also the weather was certainly not ideal, although it might easily have been a great deal worse, and in spite of all these considerations no single forced landing resulted in serious damage to machines or occupants.

Considered purely as a race, without regard to any other considerations, the Circuit of Britain stands out prominently in the history of our flying for the soundness of the organisation, the excellence of the handicapping and the unfailing courtesy of every one concerned. The Air Ministry provided the wireless organisation which enabled news of the progress of competitors quickly to be available, and which materially assisted the Press in keeping the public constantly and reliably informed. And last, but by no means least, the airmen, aircraftsmen and others from Kenley Air Station, who gave their services without pay, simply for love of the sport, helped in no small measure in looking after competitors at the start and in keeping order on the aerodrome at the finish. Thanks to all.

Honouring the Schneider Cup Winner

In some ways it was unfortunate that the Schneider Cup Race at Venice should have taken place such a short time before the holding of the Circuit of Britain, inasmuch as it prevented the Royal Aero Club from finding the time, what with the numerous tasks connected with the organisation of the Circuit, to honour in fitting manner the victor of the Schneider race. It is, of course, realised that this British victory was something far

more than the mere winning of an ordinary race. Had it not been for the very sporting spirit which provided the Cup challenger and its engine, the Italian teams would have won again this year, and the Schneider Cup would have remained in Italy as the property of the Italian Aero Club. The Supermarine-Napier victory brought the Cup to this country, and, what is far more important, it won for Great Britain the privilege of holding the Schneider Cup race in this country next year, under the organisation of the Royal Aero Club. To those who appreciate the vast possibilities of the seaplane this fact is of the utmost importance, as an international seaplane race, held at one of our seaside towns, cannot fail greatly to stimulate the general interest in this type of craft.

We therefore strongly urge the Royal Aero Club to hold, as soon as it can be arranged, a banquet in honour of the winner of the Schneider Cup Race and those associated with him in his great achievement, as a fitting appreciation of what they have done in the interests of British aviation.

Next Year's Schneider Cup

While on the subject of the Schneider Cup Seaplane Race, the thought occurs to us that, as this is an international race, why not make it so in the widest possible sense, by so choosing the course that not only we, but our neighbours across the Channel may have the opportunity of seeing the race in progress. Unless there is some clause in the rules governing the race which prevents it, why should not the course be one across the Channel between an English and a French town? Or, if a triangular course be essential, the turning points could be two English towns on the South Coast and one French town on the other side.

As regards the suitability of the open sea for such a race, if the summer months were chosen, the Channel should not be too rough even for racing seaplanes, and if a few fast motor-boats were stationed at intervals along the route there should be no great danger, certainly no greater than in the case of a cross-country race, such as the Coupe Deutsch, on modern projectiles flying at about 200 m.p.h. and landing at somewhere around half of that speed. Personally we would rather cross the Channel in a very fast racing flying boat than go across country in a racing land machine.

We offer the suggestion for what it is worth, and it may be that the fundamental rules will not allow of the suggestion being acted upon. Otherwise we think a race from country to country would be likely to attract far greater attention than one held in any one country.

The King's Cup Race

THE following is the text of the King's message to the Royal Aero Club:—

"His Majesty thanks you for keeping him informed of the progress of the racing, and will be glad if you will convey to Mr. Barnard his warm congratulations on winning the King's Cup."

It is proposed to hold the race annually for a second Royal trophy, to be retained by the winner for twelve months.

The subsidiary prizes given in connection with the Circuit of Britain have been awarded as follows:—

£40, given by the Corporation of Glasgow, for first arrival at Glasgow, F. L. Barnard.

£25, presented by the *Manchester Guardian*, for the fastest handicap time between Glasgow and Manchester, A. S. Butler.

£25, presented by the *Newcastle Chronicle*, for the fastest handicap time between Croydon and Newcastle, F. L. Barnard.

Cup, valued at £25, presented by Mr. William Kayley, of Manchester, for the second fastest handicap time between Glasgow and Manchester, F. L. Barnard.

£52 10s., presented by the Manchester City Council, for the fastest handicap time between Croydon and Manchester, F. L. Barnard.

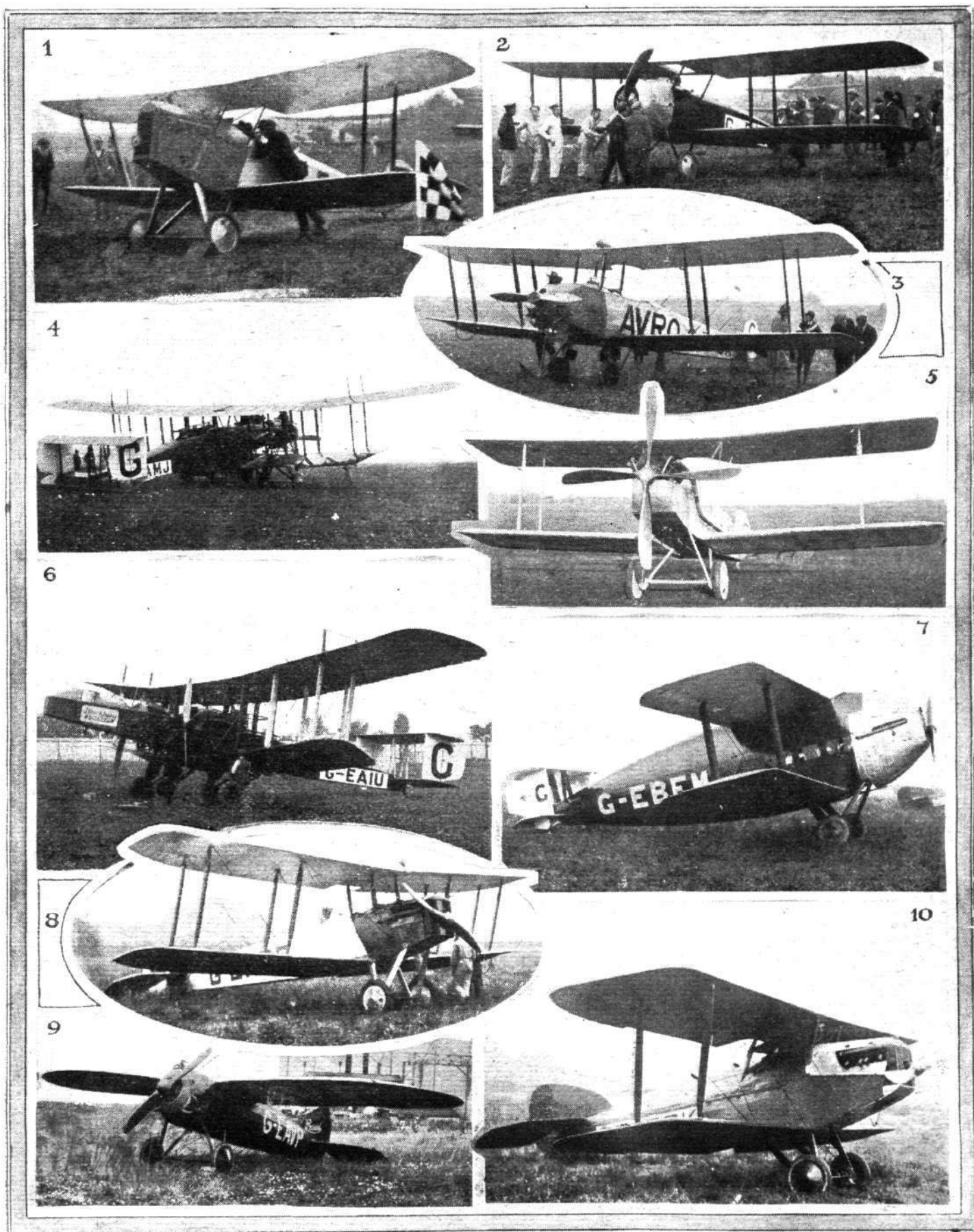
£50, given by the Bristol Aeroplane Co., for the fastest handicap time from Croydon to Bristol, F. L. Barnard.

Piece of plate, presented by the Bristol Rotary Club, for fastest time from Croydon to Bristol with engine of over 200 h.p., F. L. Barnard.

Bristol Stock Exchange plate, for fastest handicap time between Croydon and Bristol, with engine of 200 h.p. or under, F. P. Raynham.

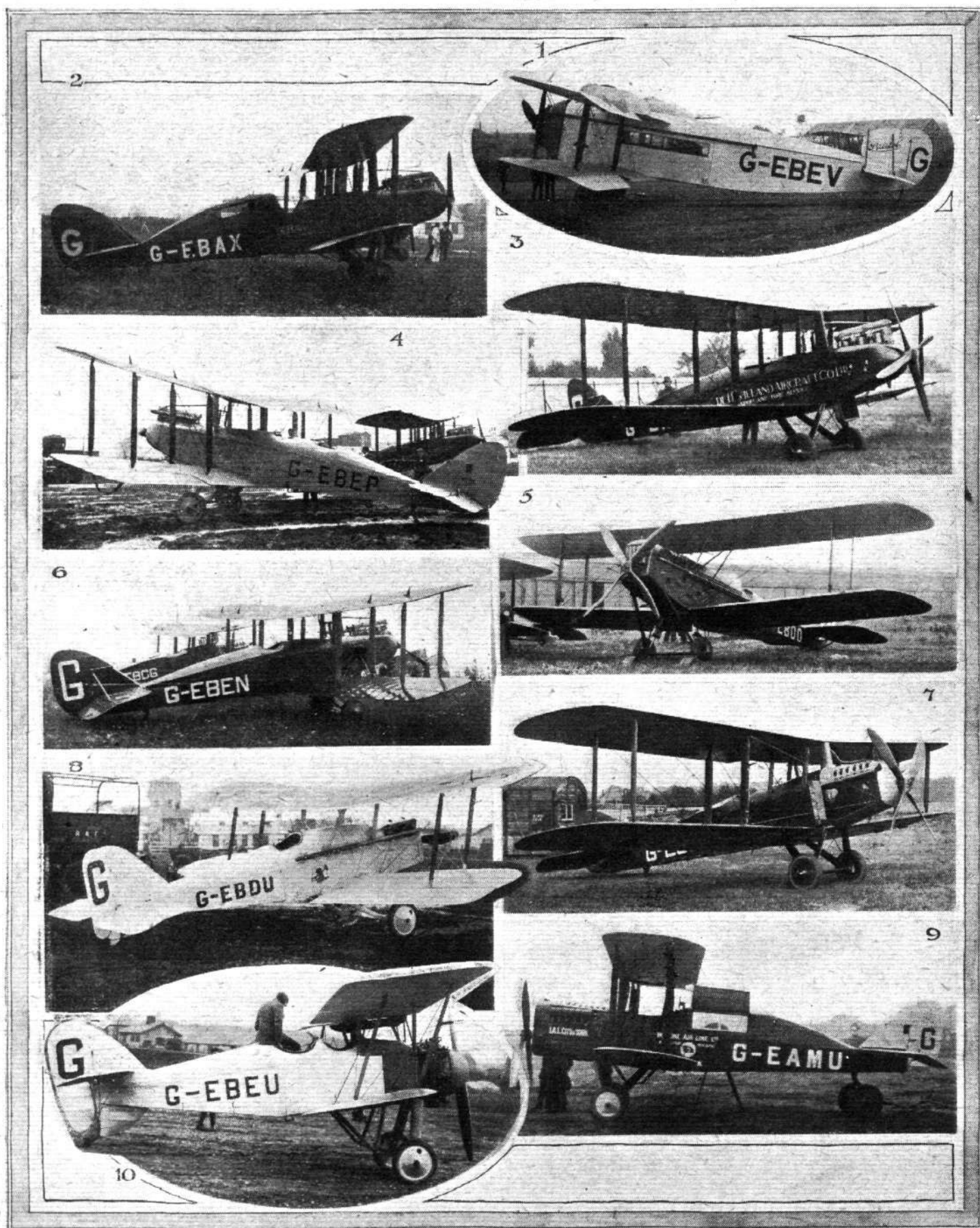
Piece of plate, given by Mr. Featherstone Whitty, of Bristol, for fastest handicap time between Glasgow and Bristol, A. S. Butler.

THE CIRCUIT OF BRITAIN



THE RACE FOR THE KING'S CUP: Photographs of the competing machines, arranged in the order of starting. 1, Avro Baby. 2, Sopwith Gnu. 3, Avro Lucifer. 4, Blackburn Kangaroo. 5, Boulton and Paul P.9. 6, Blackburn Kangaroo. 7, Vickers Vulcan. 8, Avro Viper. 9, Bristol Monoplane. 10, Martinsyde F.6.

THE CIRCUIT OF BRITAIN



THE RACE FOR THE KING'S CUP : Ten of the faster machines, arranged in the order of starting :
 1, Bristol 10-Seater ; 2, D.H.9C ; 3, D.H.9B ; 4, D.H.9 ; 5, D.H.37 ; 6, D.H.9 ; 7, D.H.9A ; 8, S.E.5A ;
 9, D.H.4A (winner of the race) ; 10, Siddeley Siskin (scratch).



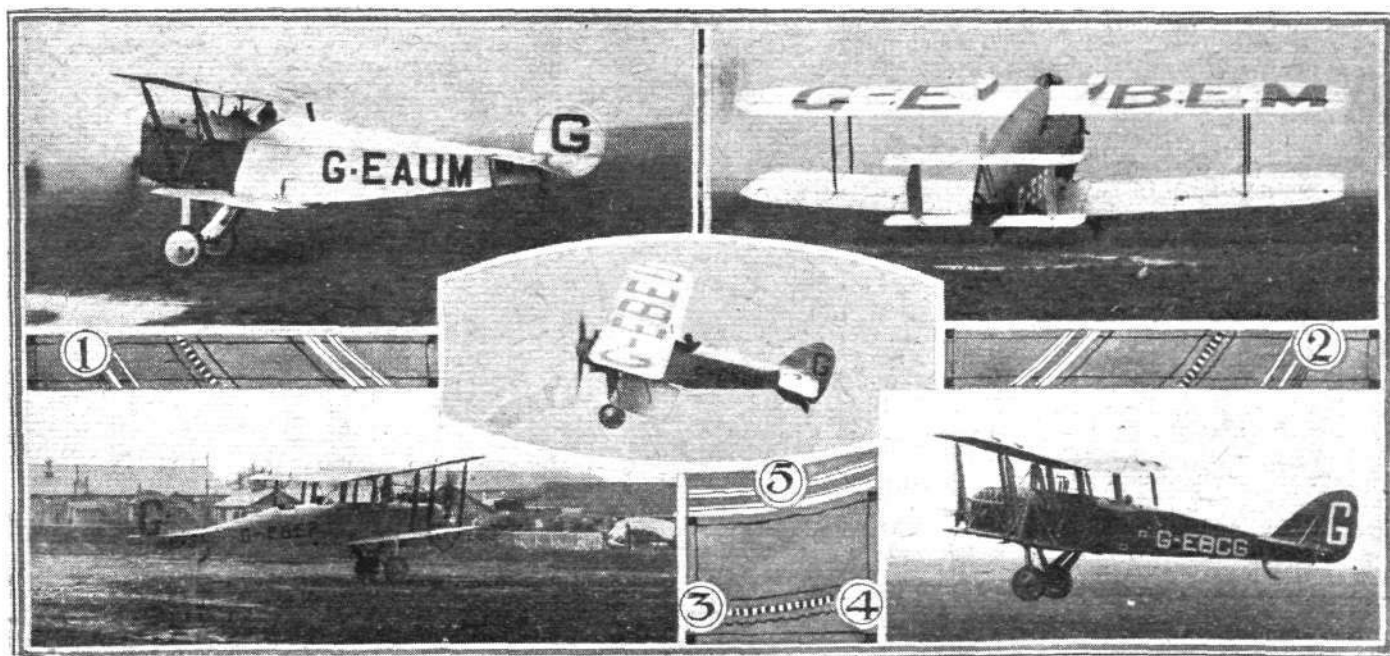
Line-up of the machines on the morning of the start.

A BITTERLY cold wind was blowing across Waddon Aerodrome when, in the early morning of Friday, September 8, the machines began to line up for the start of the race around Britain (more or less) for the Cup presented by His Majesty the King. The visibility did not promise to be very good over the first part of the course, but wireless reports promised better conditions on the other side of London. It had been hoped that the weather would not be too favourable, as it was desired to make the race a real test of the pilots' skill as well as a test of the machines, and in this respect the race was favoured. The weather conditions, although far from being ideal, were not so bad as to cause very serious trouble, yet sufficiently difficult to render careful piloting and navigation necessary. By 8.30 a.m. most of the machines were on the starting line, and shortly afterwards the little Green engine of the Avro Baby was started for its preliminary warm-up, the Baby being the limit machine. Promptly on the stroke of nine our old friend Reynolds dropped his red flag, and Squadron-Leader Payn got away in fine style, the Green humming merrily.

Next on the list for getting away was Bert Hinkler on the racing Avro Baby, but owing to an unfortunate accident a couple of days previously he was a non-starter. It appears that Hinkler had just taken off from the Avro aerodrome at Hamble, and that, just as he was some little distance out

over Southampton Water, his engine cut out suddenly and without warning. Hinkler at once commenced a sharp turn in an attempt to reach the beach, but his altitude was too low, and the machine struck the sea while still on the turn. Hinkler was somewhat cut about the face, but otherwise none the worse for his experience, in spite of a very cold ducking in Southampton Water. The machine, however, was a total write-off, and no other Baby was ready, otherwise Hinkler would have started in the race on that. Knowing how very keen Hinkler is on his flying, we can imagine how he must have taken the accident to heart, and we sincerely sympathise with him. He goes into these races heart and soul, and his disappointment at being unable to start in the race was shared by many. The cause of the engine stopping has not been definitely ascertained, but it is thought that magneto trouble may have been responsible.

Having seen Payn off we wander about among the machines, chatting to pilots, entrants and visitors, the latter having turned up in considerable numbers in spite of the early hour. One of the machines, the Bristol ten-seater, is reported to have alighted at Netheravon with engine trouble, and there is some doubt as to whether it will arrive in time to take part in the race. In the meantime the hour of Flight-Lieut. Longton's start on the Sopwith "Gnu" approaches, but the engine appears to be obstinate. Mechanics work like



SOME OF THE STARTS FOR THE KING'S CUP RACE: 1, The Avro Baby gets away; 2, Capt. Cockerell off on the Vickers Vulcan; 3, Capt. Muir starting on the D.H.9; 4, Perry gets off on the D.H.9A; 5, Courtney zooms off in a left-hand turn on the Siddeley Siskin.

heroes "swinging the prop.," but nothing happens. Repeated attempts succeed in coaxing a consumptive cough from the engine, but in the meantime the minutes and seconds are being frittered away, and finally Reynolds drops his flag. Officially the "Gnu" has started, and any further time spent in getting the engine going counts as flying time. However, Longton keeps smiling, remarking that it is a



Gen. Sir Sefton Brancker, D. of C.A., discussing the prospects with Comdr. James Bird.

long race, and that much may happen before the finish. Capt. Cockerell volunteers for a spell of prop. swinging, and the engine begins to fire, spitting flames out of its exhaust ports and setting some petrol on the ground on fire. This necessitates wheeling the "Gnu" back a few paces to avoid fire on board.

Major Carr, while this little incident is taking place, has got his Bristol "Lucifer" engine going, and is warming-up preparatory to his start. In spite of its three cylinders the "Lucifer" ticks over very slowly, and when being opened out on the drop of the flag it runs wonderfully smoothly as Carr soars off on the Avro. Whether it is the cowlings or due to some other cause, the "Lucifer" does not appear to have that "tinny" sound which is so often heard in air-cooled engines, although with but three cylinders it naturally has a more staccato exhaust than the multi-cylinder engines.

Lieut.-Col. Spenser Grey is due to start next on one of the Blackburn "Kangaroos," and his Rolls-Royce engines are being warmed-up. In spite of a bandaged foot Col. Grey hopes to put up a good show, and awaits the drop of the flag, while Longton, his engine at last having come to life, gets away some 25 minutes late. A few minutes later the "Kangaroo" receives the signal and follows Longton into the haze.

The Boulton and Paul P.9, entered by Gen. Weir and piloted by Holmes, gets away next. Although not very fast the P.9 comes in for favourable comment on account of its sensible and business-like design, and many express the opinion that it should be a very useful machine for economical and safe flying by private owners. With an engine of but 90 h.p. the running costs should be low.

A D.H.6 is seen to circle the aerodrome, and finally alights behind the line-up of racing machines. The pilot turns out to be Capt. de Havilland, who has flown over from Stag Lane, accompanied by one of his sons, who objects to crossing through London by motor-car. We learn that on the return journey a younger edition will take his place in the D.H.6. Capt. de Havilland does quite a good deal of flying on his old "6," which, fitted with wings of somewhat less "clutching hand" propensities, is reasonably fast and yet can be landed almost anywhere.

A machine is seen to approach the aerodrome from the west. This turns out to be the Bristol ten-seater, whose

engine trouble has been temporarily remedied at Netheravon during the night, and it now looks as if it will be able to start after all.

The second Blackburn "Kangaroo" by now has its engines running and soon takes the air with a good complement of passengers, Kenworthy making quite a zoom as he leaves the aerodrome. Although designed a good many years ago, the "Kangaroo" still seems able to put up a very respectable climb.

The second Boulton and Paul P.9, piloted by Col. Tennant, gets away a couple of minutes behind Kenworthy, and soon both machines are lost in the haze.

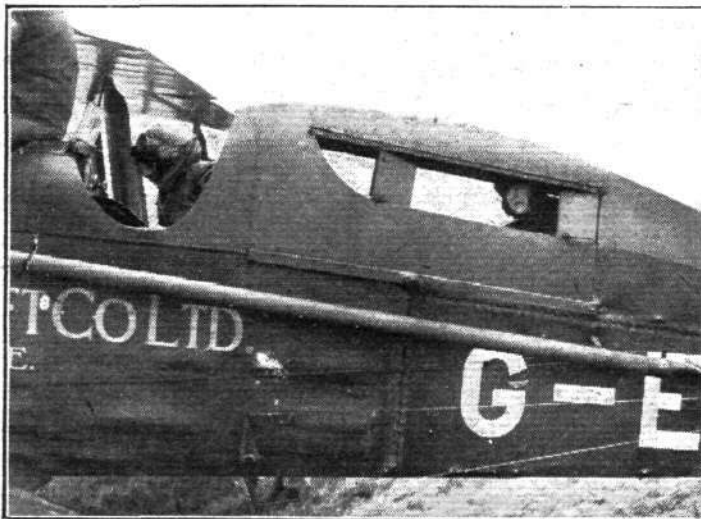
In the meantime Capt. Cockerell has started the Rolls-Royce "Eagle" of his Vickers "Vulcan," and as he waits for the engine to warm-up he finishes a cigarette. Through the cabin windows may be seen the faces of his several passengers, who, protected from the icy wind, appear to look forward to a comfortable journey. On the drop of the flag the "Vulcan" slowly gathers way, and, after a very short run, she is in the air and passing over the enclosures. As one of the most recent commercial machines, her behaviour is watched with interest.

Cpts. Cockerell and Broome, the two Vickers pilots, who are affectionately known as the "heavenly twins," are not usually very far separated, and, possibly bearing this fact in mind, the handicappers have placed them next to one another in order of starting, Capt. Broome getting away on the Avro "Viper" about two minutes after Cockerell has left.

The pretty little Bristol monoplane gets away very cleanly, piloted by Haig, and is followed a minute later by Raynham on his Martinsyde F.6. This machine has been considerably renovated since its appearance in the Aerial Derby, and now appears in bright yellow, with the edges of the wings and fuselage painted in black. Raynham has been working like a Trojan on the machine, and has done all the doping and painting, as well as tuning-up of the engine, himself. As one of our few owner-pilots, and one of our oldest pilots, Raynham, who is popular everywhere, carries with him the good wishes of everybody, and not least of his rivals in the race. He gets away in his usual irreproachable style, and many think highly of his chances in the race.

The Bristol ten-seater is on the line with its engine running, and Uwins in the pilot's cockpit. The engine does not sound quite as smooth as is its wont, and when Uwins opens out to take off it is noticed that the "Jupiter" is missing badly. However, Uwins manages to take off, although not at his usual angle, and as the machine fades into the haze we are not without misgivings as to its chances of completing the course.

Attention is now devoted to the D.H.9C, which is being piloted by Flying Officer Leslie Hamilton, and which will



Lady Anne Savile in the cabin of her D.H.9C, piloted by Flying Officer Leslie Hamilton.

carry as passenger its entrant, Lady Anne Savile (Princess Loewenstein-Wertheim), who, very sportingly, has decided to make the flight in the cabin of the 9C. This machine is of interest on account of the fact that it is fitted with one of the new Aveline stabilisers, which are a great improvement on the older model, especially in the matter of weight, which has been reduced to about 50 lbs., complete. The machine is also provided with telephone so that the passenger can be

in constant communication with her pilot. In the gusty wind prevailing it is expected that the Aveline stabiliser will assist materially in avoiding violent movements of the machine. At the start, which takes place at 10.32, the stabiliser is not, of course, operating, but as soon as well clear of the ground it is thrown into gear and one looks forward to the pilot's account of it on his return the next day.

Cobham, on the old D.H.9B G-EAAC, is away next. This machine is an old-timer truly, as its identification letters show, the beginning being made, when these letters were first introduced, with G-EAAA, so that the 9B was the third machine to be registered under the new scheme. Since that time Cobham has flown it many thousands of miles, and has used it on nearly all his European tours. We understand it is the intention of the de Havilland Aircraft Co. to keep it going as long as at all possible, so as to get an idea of how long an aeroplane really can be used before it becomes worn out.

From the appearance of the machine in the race, and the way it got away, it would seem that it still has a good many years to live, barring accidents.

Mr. A. S. Butler, on the D.H.37, "Sylvia," makes a very clean start, and with its golden wings the machine looks very pretty, although at anything but low altitudes the gold paint appears merely as a yellow. His Rolls-Royce "Falcon" appears to be running extremely well, and all hope that Mr. Butler, good sportsman that he is, will have better luck than he had in the Aerial Derby.

The D.H.9 flown by Mr. Piercey, and entered by Col. Darby, looks very spick and span. A streamline fairing has been fitted behind the pilot, and gives the machine quite a racy appearance.

We learn from Col. Darby that a special set of deck fairings have been standardised for this type by the A.D.C., so that customers can convert, in a very short time, the D.H.9 from a two-seater fighter with gun ring to a single-seater with streamline back and space inside for loads of various sorts. The Siddeley "Puma," as usual, runs as smooth as a clock when the machine starts.

Perry on the A.D.C. 9A, with Rolls-Royce "Eagle" engine, takes off next. Several alterations have been made to this machine, notably the suppression of the nose radiator and the fitting of side radiators instead. The original radiator was intended for the "Liberty" engine, and was somewhat too large for the Rolls-Royce "Eagle." The alteration has resulted in better running of the engine, and has added considerably to the speed of the machine.

Mr. Cyril Turner, on "The Sweep," Major Savage's S.E.5A, which is used for "sky writing," starts off several minutes after the D.H.9A. "The Sweep" looks anything but what its name might lead one to expect, being finished entirely in white, a colour which makes the machine look even smaller than the usual S.E.'s. Just before Turner starts, Mrs. Savage hands him a bunch of flowers to cheer him on his long journey and to bring him luck.

F. L. Barnard, Commodore of the Instone Air Line, is starting second to scratch. His D.H.4A, also an old-timer, is on the line, waiting the signal. This machine was, we believe, owned by Instones before they started their air services—in fact, before the old A.T. and T. commenced operations on the London-Paris route, when it was used for conveying important documents, or for personal calls, between the various Instone offices. The addition of the cabin top

was, we believe, carried out at the Avro works at Hamble. Thus this machine is probably, next to Cobham's D.H.9, the oldest in the race. However, to return to the start, Mr. Reynolds raises his red flag, and Barnard mistakes this for the signal to start, opens out his engine and sails away.



Filling up Courtney's Siddeley "Siskin" before the start.

As a matter of fact he should, of course, have waited until the flag dropped, it being the usual procedure for Mr. Reynolds to raise the flag a few seconds before the starting time, by which competitors know that they have but a short time before the signal to go is given.

Once he had got away it was out of the question to recall Barnard, and the judges decided to delay his start from Birmingham by the 10 seconds he had "gained" by his faulty start.

In the absence of the Supermarine "Sea Lion," which was delayed in the Mediterranean owing to the steamer bringing it back to England from Naples (where it has just won the Schneider Cup) having to call at various ports, the Siddeley "Siskin," piloted by Courtney, is to start scratch. He gets his engine going without trouble, and with its 14 cylinders the Siddeley "Jaguar" appears to run extremely smoothly. We learn from Courtney that the absence of vibration when the engine is running all out is remarkable, and there is an overlapping of explosions which makes the "Jaguar" sound quite different from other radial engines.

As mentioned in our issue of last week, the "Siskin" is built for the Air Ministry, and no particulars are therefore permitted to be published, beyond what may be gathered from an external examination. The machine is a two-seater, in which it differs from the original "Siskin," and the mechanic appears to have some difficulty in wriggling into his cockpit. However, with the assistance of Courtney, he manages it a few seconds before the flag drops, and the "Siskin," after a very short run, soars into the air in a slight left-hand turn, and the last of the machines is on its way towards Birmingham, the first control.



The winning machine comes to a standstill. Capt. Barnard greeted by admirers.

THE FINISH



THE FIRST THREE MACHINES HOME : Barnard's D.H.4A (the winner) ; Raynham's Martinsyde F.6 ; and Cobham's D.H.9B, lined up in front of the enclosures.

Again on Saturday the weather was anything but mild, a strong northerly wind blowing masses of cloud across the sky at a rate which promised a speedy journey for the machines which, that morning, would leave Glasgow and make their way, *via* Manchester and Bristol, back to Croydon. The Royal Aero Club had made arrangements for the accommodation of numerous visitors, and towards three o'clock in the afternoon the enclosures began to present an animated spectacle, people coming in in thousands, by motor, by tram from West Croydon and from Waddon Station. The threatening aspect of the weather no doubt kept a great number of visitors away, but by 3.30 the crowds in the enclosures showed that, in spite of the cold and the relative uncertainty of the exact time at which one might expect the first man back, the public still takes an interest in flying.

It had been arranged that two or three pilots were to give exhibition flights, but the organisers of the race went one better than that by arranging, in addition to the exhibition flights that had been promised, an impromptu race over the usual circular course between four machines. The machines flying in this race were piloted by Flying Officer Scholfield, Rex Stocken, S. H. Hayns and H. H. Perry (who had returned to Waddon after being out of the great race).

The race was won by Perry, on the red S.E.5A, Scholfield having to retire owing to some slight indisposition on the part of his engine. While waiting for the arrival of the first man home, speculation was naturally lively as to who would be the winner. Barnard had been doing extremely well the whole way, but so had some of the other competitors, especially Raynham and Cobham. With regard to Barnard opinions were, apparently, approximately evenly divided. One side maintained that he ought to have been disqualified for starting before his time, and that he should have been recalled from the first control (Birmingham) so as to make a fresh start. This would, of course, have meant that he would have had to abandon the race, as the leeway would have been far too great to make up. The other side expressed the opinion that, in a race of over 800 miles, a start of 10 seconds, especially when so obviously caused by a *bona-fide* misunderstanding, could not possibly make any difference, compared with the number of other things which could happen during such a lengthy race. One thing, however, is quite certain : having once let Barnard carry on, and sanctioned his doing so by delaying his start from Birmingham by an amount equal to that "gained" by his faulty start, the officials could do no other than accept his other stages.



FINISH OF THE RACE FOR THE KING'S CUP : 1, Barnard crossing the finishing line. 2, Raynham finishes two minutes later. 3, Chairing the winner. Towards the right-hand side of the picture Raynham may be seen smiling good-humouredly at the hoisting of his successful rival.

SEPTEMBER 14, 1922



KING'S CUP CIRCUIT OF BRITAIN AIR RACE

Race as Received by Air Ministry Wireless

PROGRESS OF FLIGHT

OUTWARD

Order of Start	Regn. Mark.	Machine.	Pilot.	Time Allowance. Out.	Croydon-Birmingham.		Birmingham-Newcastle.		Newcastle-Glasgow.		Net Flying Time.	Position.
					Depart.	Arrive.	Depart.	Arrive.	Depart.	Arrive.		
1	EAUM	Avro Baby..	H. J. Payn ..	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	13
2	EAXL	Avro Baby..	B. Hinkler ..	2 21 10	9 0 0	10 43 50	13 39 44	16 46 50	18 4 50	19 45 0	7 45 0	
3	EAGP	Sopwith Gnu	W. H. Longton	2 2 54	9 18 16	Non-starter.						
4	EADA	Avro Lucifer	C. R. Carr ..	1 16 52	9 24 58	11 11 51	12 44 51	15 16 17	16 56 17	18 32 8	6 7 10	9
5	EAMJ	Blackburn Kangaroo	Spenser D. A. Grey	1 46 43	9 34 27	11 8 26	12 38 26	Landed	Halifax.	—	—	—
6	EASJ	Boulton and Paul P.9	C. T. Holmes	1 26 56	9 54 14	11 25 48	12 55 48	15 55 18	Returne	d Newca	stle.	—
7	EAIU	Blackburn Kangaroo	R. W. Kenworthy	1 19 18	10 1 52	11 29 1	12 59 1	15 35 59	17 5 59	18 42 50	5 40 58	10
8	EAWS	Boulton and Paul P.9	J. E. Tennant	1 16 58	10 4 18	11 49 52	13 19 52	16 30 48	Returne	d Newca	stle.	—
9	EBEM	Vickers Vulcan	S. Cockerell ..	1 14 29	10 6 41	11 28 3	12 58 35	15 44 11	17 14 11	18 54 1	5 47 20	11
10	EAPR	Avro Viper	F. C. Broome..	1 6 9	10 14 41	11 34 7	13 3 7	15 14 6	16 44 6	18 7 44	4 53 3	8
11	EAVP	Bristol Monoplane	R. A. de H. Haig	1 4 18	10 16 52	Landed	Halidon.	—	—	—	—	—
12	EBDK	Martinsyde F.6	F. P. Raynham	0 57 59	10 23 11	Landed	Aylesbury.	—	—	—	—	—
13	EBEV	Bristol 10-seater	C. F. Uwins :	0 56 58	10 24 12	11 27 23	12 57 23	14 47 0	16 17 52	17 22 0	3 57 37	2
14	EBAX	D.H.9c	L. Hamilton ..	0 53 58	10 27 12	Landed	Northolt	—	—	—	—	—
15	EAAC	D.H.9b	A. J. Cobham	0 49 9	10 32 1	11 40 46	13 10 46	15 4 21	16 34 21	17 51 20	4 19 19	6
16	EBEP	D.H.9	A. F. Muir ..	0 45 27	10 35 43	11 36 30	13 6 30	14 48 8	16 18 48	17 25 53	3 50 10	3
17	EBDO	D.H.37	A. S. Butler ..	0 41 40	10 40 10	11 50 30	13 20 30	16 6 28	17 36 28	18 55 35	5 15 25	12
18	EBEN	D.H.9	M. M. Piercey	0 40 8	10 41 2	11 38 17	13 8 17	15 20 51	16 50 51	18 5 3	4 24 1	7
19	EBCG	D.H.9a	H. H. Perry ..	0 39 16	10 41 54	11 40 15	13 18 27	15 7 46	16 37 46	17 47 24	4 5 30	5
20	EBDU	S.E.5a	C. Turner ..	0 35 5	10 46 5	Landed	Northolt	—	—	—	—	—
21	EAMU	D.H.4a	F. L. Barnard	0 24 14	10 56 56	11 55 25	13 15 25	Returne	d Birmin	gham.	—	—
22	EBEU	Siskin	F. T. Courtney	0 23 30	10 57 40	11 50 57	13 20 57	14 52 17	16 32 17	17 19 53	3 22 13	1
				Scratch	11 21 10	12 11 10	13 31 17	15 8 15	16 38 15	17 43 0	3 21 50	4

HOMeward

Order of Start	Regn. Mark.	Pilot.	Time Allowance. Home.	Glasgow, Depart.	Man- chester, Arrive.	Man- chester, Depart.	Bristol, Arrive.	Bristol, Depart.	Croydon, Arrive.	Net Flying Time.	Total Net Flying Time.	Position.
1	EAUM	H. J. Payn ..	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	—
2	EAXL	B. Hinkler ..	2 29 2	9 58 10	13 10 44	Returne	d Manch	ester.	—	—	—	—
3	EAGP	W. H. Longton	2 9 46	—	—	—	—	—	—	—	—	—
4	EADA	C. R. Carr ..	2 2 41	9 7 36	11 18 3	12 48 25	14 15 19	15 45 19	17 13 57	5 6 21	11 13 31	8
5	EAMJ	Spenser D. A. Grey	1 52 40	—	—	—	—	—	—	—	—	—
6	EASJ	C. T. Holmes	1 31 46	—	—	—	—	—	—	—	—	—
7	EAIU	R. W. Kenworthy	1 22 43	9 58 16	12 5 28	13 35 28	14 54 45	16 24 45	17 41 50	4 43 34	10 24 32	9
8	EAWS	J. E. Tennant	1 21 10	—	—	—	—	—	—	—	—	—
9	EBEM	S. Cockerell ..	1 18 38	10 13 32	12 22 30	13 52 30	15 9 35	16 39 35	17 56 35	4 43 3	10 30 23	11
10	EAPR	F. C. Broome..	1 10 12	9 35 41	11 43 24	13 13 24	14 27 30	15 57 30	17 6 52	4 31 11	9 24 14	7
11	EAVP	R. A. de H. Haig	1 7 53	—	—	—	—	—	—	—	—	—
12	EBDK	F. P. Raynham	1 1 14	—	—	—	—	—	—	—	—	—
13	EBEV	C. F. Uwins ..	1 0 9	9 0 0	10 50 0	12 20 0	13 21 56	14 51 56	15 46 6	3 46 6	7 43 43	2
14	EBAX	L. Hamilton ..	0 56 59	—	—	—	—	—	—	—	—	—
15	EAAC	A. J. Cobham	0 51 54	9 37 35	11 37 46	13 5 46	14 13 25	15 43 25	16 48 52	4 11 17	8 30 36	6
16	EBEP	A. F. Muir ..	0 47 59	9 16 3	10 50 0	12 20 0	13 27 34	14 57 34	15 55 40	3 39 37	7 29 47	3
17	EBDO	A. S. Butler ..	0 43 17	10 50 27	12 38 21	14 8 21	15 15 15	16 45 15	17 46 40	3 56 13	9 11 38	10
18	EBEN	M. M. Piercey	0 42 22	10 0 50	11 32 29	13 2 29	14 2 50	15 32 50	16 27 5	3 26 15	7 50 16	5
19	EBCG	H. H. Perry ..	0 41 28	9 44 5	11 24 23	12 54 23	13 56 16	15 56 16	16 23 10	3 39 5	7 44 35	4
20	EBDU	C. Turner ..	0 37 2	—	—	—	—	—	—	—	—	—
21	EAMU	F. L. Barnard	0 25 34	—	—	—	—	—	—	—	—	—
22	EBEU	F. T. Courtney	0 24 28	9 33 14	10 57 30	12 27 30	13 23 0	14 53 30	15 43 51	3 10 37	6 32 50	1
			Scratch	10 21 10	11 38 39	Returne	d Manch	ester.	—	—	—	—

Nevertheless, feeling ran high between the "laws is laws" party and those who were inclined to look more upon the spirit of the rules than on strict compliance with the words. There is a good deal to be said for both sides, although we rather incline to think that when rules are made they should be strictly adhered to, even if the penalties may appear unduly heavy for the offence committed. Certainly in the case of Barnard it would have been very bad luck to have been disqualified, but, on the other hand, once one begins to relax the rules, where is the line to be drawn?

Just before a quarter to four a speck appeared to the west of the aerodrome, rapidly increasing in size. Through powerful glasses it could soon be seen that the machine was the D.H.4A, and as no other machine was in sight it became evident that the race had been won by Barnard. With a banked right-hand turn the machine swept across the finishing line, going a great pace down wind, and after circling the aerodrome Barnard landed and taxied towards the judges' tent in front of the enclosures, greeted by loud cheers. In the meantime another machine was seen to approach, which soon turned out to be Raynham's yellow Martinsyde F.6. Crossing the finishing line at high speed, Raynham swung

machine would undoubtedly have given a good account of itself. That a similar trouble should have put Hinkler out of the running is even more regrettable, as the new racing Avro Baby was "some" 'bus and showed an excellent turn of speed. However, both the Avro Baby and the Green engine have far too well-established reputations for such minor mishaps to affect them adversely, and one can but regret the ill luck which prevented them from showing once more what they can do.

As to the fate which overtook the other machines that dropped out, this is referred to under the section dealing with the race as seen from the various controls. The Bristol 10-seater came down at Northolt, the news of which did not come as a surprise to those who heard the engine at the start on the Friday, and who had heard of the troubles that had been experienced at Netheravon. As is generally the case with forced landings, this one was not due to the engine itself, but to other parts of the installation. Perry on the D.H.9A also alighted at Northolt (with ignition trouble, we believe). Haig landed at Aylesbury and Broome at Halidon. The cause of their trouble we have not yet been able to ascertain. The two Blackburn Kangaroos got to Newcastle



The Race for the King's Cup: Our picture shows the cheering following the presentation of the Cup to Mr. Barnard by Col. Moore-Brabazon. Between Barnard and Col. Moore-Brabazon may be seen Sir Samuel Instone, entrant of the winning machine.

round into the wind and alighted, taxiing rapidly up behind Barnard and coming to a standstill by his wing tip.

Barnard was chaired by admirers and carried in triumph up to the railings of the enclosures amid ringing cheers. His flying had been consistently good over the entire route, and if one grants that the original mistake should be overlooked, he thoroughly deserved his win. Even as it was, Raynham might have won the race but for the fact that his compass got into a spin and he had to make somewhat of a detour in order to get it steadied again. He was only two minutes and a few odd seconds behind Barnard, so that he lost the race by the smallest margin. The handicappers are to be congratulated upon having secured such a close finish after a race of over 800 miles.

While Barnard was being congratulated upon his victory Cobham came in third, and then followed at intervals Piercey, Butler, Hamilton, Cockerell (whose descent *à la* lift caused great admiration), Longton, Holmes, Muir and Tennant. That the handicapping was good will be realised from the fact that the first five men finished within 45 minutes. Considering that the race was over a distance of 810 miles and through very varied weather conditions, this is distinctly good. The slower machines had the worst of it, naturally, as they would be affected to a greater extent by the strong wind.

Payn had to return to Manchester with magneto trouble, after having gamely fought his way through high winds. To those who know the Avro Baby and its Green engine this was particularly disappointing, as but for this fact the

and made a start for Glasgow, but as it was getting dark they decided to return to Newcastle. A fresh start was made next morning, but the time that had been lost was too great to enable them to make it good, and they returned from Manchester to Waddon, arriving just after dark.

Carr on the Avro Lucifer lost his way, owing to the compass card dropping into the bowl of the compass, and descended to find out where he was. A tyre had been punctured previously, and as the field in which he had alighted was too small to get out of with mechanic and full load on board, he had to fly the machine off solo and pick up his passenger and certain spare parts in another field some three miles away. All this naturally took considerable time, and Carr decided to abandon the race. On alighting at Manchester he was loudly cheered by the spectators, who were under the impression that he had flown the proper course. He then made for Waddon, where he arrived during the afternoon. The Bristol Lucifer, he stated, had run splendidly throughout, and he had nothing but praise for this wonderful little three-cylinder air-cooled engine.

Turner returned to Manchester on his S.E.5A, his particular trouble being dirt in the carburettor, and Payn, as has already been stated, had to return to Manchester owing to magneto trouble.

Altogether the race must be judged a success, although many machines which had been expected to finish the course with flying colours were prevented by minor troubles from doing so. Curiously enough, the machines which did best in the race were of fairly old type. The winning D.H.4A

is a War-time type, but its Rolls-Royce Eagle engine has a reputation for reliability. The de Havilland machines, of which a great number were entered, did well almost without exception, and Raynham's Martinsyde F.6 was within two minutes of the winner. The Vickers Vulcan, a commercial machine of recent type, completed the course without difficulty, although it was hampered by the high wind, and both the Boulton and Paul P.9's finished the course, in spite of the fact that they have engines of 90 h.p. only. Even the old Sopwith Gnu entered by Col. McClean, and flown by Longton, stuck it to the bitter end, once it did get going.

One lesson which, it appears, can be drawn from the race

is that if it is possible for pilots to find their way around Britain without the assistance of directional wireless, it should be possible to run aeroplane services to towns in the north and Midlands, at any rate during many months of the year, if the necessary ground organisation were established.

At the close of the day the King's Cup was presented to Barnard by Lieut.-Col. Moore-Brabazon, and it was announced that His Majesty had intimated that he intended to present another Cup next year, the event to be an annual one henceforth. This announcement will be received with satisfaction by all interested in aviation, and the thanks of all are due His Majesty for his generous offer.

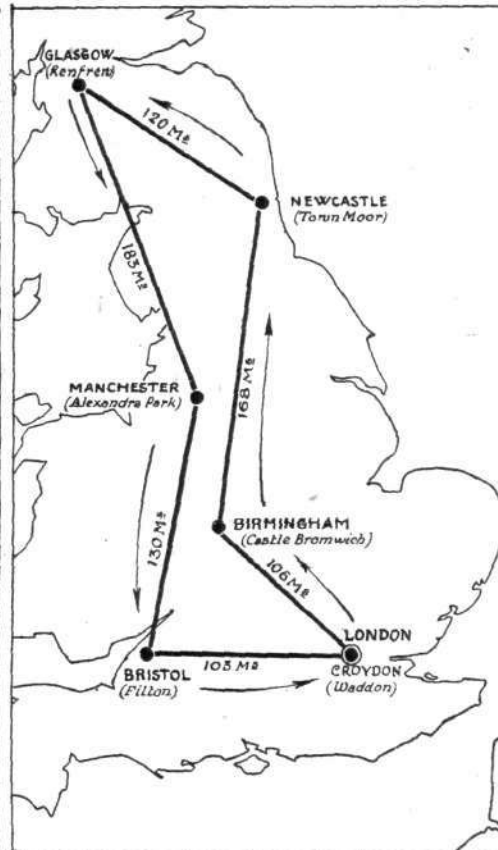
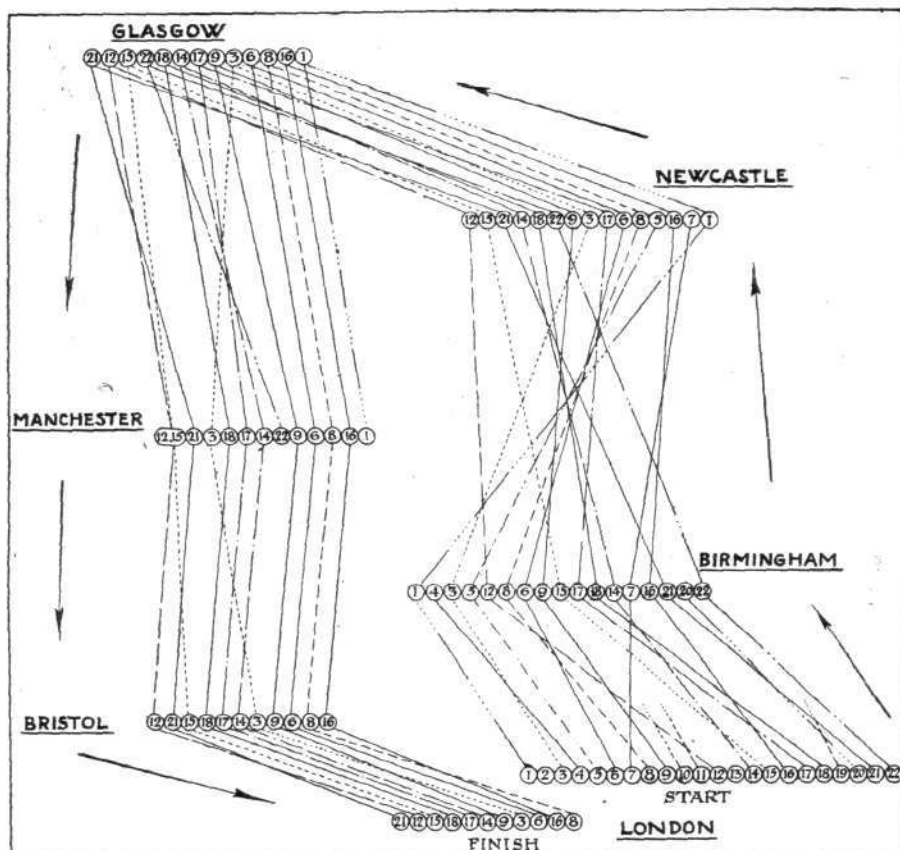
FROM THE CONTROLS

Croydon-Birmingham

SOME 6,000 people assembled at Castle Bromwich Aerodrome, Birmingham—the first control on the outward journey—to witness the arrivals. During the early part of the morning the weather was poor and visibility was bad, but by about 10 o'clock the sun came out and conditions were much brighter. The first to arrive was the limit man, Maj. Payn, on the Avro Baby, who crossed the line at 10.43.50, and reported a troublesome journey due to magneto trouble and thick weather conditions over Coventry. Some twenty-four minutes later Maj. Carr landed, followed in four minutes by Flight-Lieut. Longton. After this a bunch of competitors arrived within a few minutes as follows: Spenser Grey

available; whilst Uwins met with engine trouble from the start and descended at Northolt, but was not able to put things right in time to make it worth while continuing. Perry also landed at Northolt.

All who had arrived at Birmingham got away according to schedule, except Payn, who lost some 87 minutes owing to magneto trouble, and Piercey, who was delayed 9 minutes. After leaving Birmingham Turner experienced dirt-incarburettor trouble, and had to land in a small field near Uttoxeter, where he unavoidably made a somewhat "rough" landing. Just before he did, however, the engine picked up, and believing the "all clear" had sounded, decided to make a fresh start. He had not gone far when he noticed that



THE KING'S CUP RACE: On the right a sketch map of the course. On the left a diagram of the progress of the race, showing the manner in which the various competitors changed positions. The figures, read from left to right, indicate the order in which competitors arrived at the various controls, and by following the lines the position of any competitor can be traced.

(11.25), Raynham (11.27), Tennant (11.28), and Holmes (11.29).

At 11.34 Cockerell arrived, with Cobham two minutes behind. Hamilton, with Lady Anne Savile, arrived next at 11.40, and both reported an enjoyable trip, having flown at about 500 ft. and made 115 m.p.h. Piercey and Butler were the next two to arrive, at 11.46 and 11.48 respectively. Then Muir and Barnard followed at 11.50, the former only 17 seconds ahead of the latter. Turner came in some five minutes later, and the last to arrive was Courtney, at 12.11.

The best time for this section was made by Courtney, whose speed was 127.2 m.p.h. Barnard was next with a speed of 120 m.p.h. Cobham and Raynham were both just on the 100 m.p.h. mark. Of the non-arrivals Broome was forced to descend at Daventry, owing we believe to plug trouble; Haig landed at Aylesbury, having experienced some minor engine trouble, to remedy which no spares were

sundry bracing wires looked a bit "wonky," and wisely decided to return to Birmingham, and on arriving found that the rough landing had rather upset things a bit, so there was nothing for it but to retire.

Birmingham-Newcastle

At Newcastle nearly 30,000 people gathered on Town Moor to see the competitors arrive. Weather conditions were none too good when the first man, Raynham, arrived at 2.47.52. About a minute later Cobham arrived. The third man in was Barnard, who arrived at 2.52.17. At four minutes past three, Hamilton and Lady Savile arrived, with another D.H.9, Piercey's, about three minutes behind. The scratch man, Courtney, was the next to arrive, one minute later. Cockerell, Longton, Butler, Holmes, Tennant, Spenser Grey and Muir then arrived in the order given at intervals of a few minutes. The last two to arrive were Kenworthy and Payn. Several of the competitors experienced troubles

during this second stage. Courtney ran out of petrol just outside Newcastle, but managed to glide into the aerodrome. Raynham had compass trouble, and lost time in straying off the route a little. Longton had to land at Bakewell to change a plug, whilst Muir was forced to land at Chesterfield with valve trouble. Tennant ran out of petrol five miles from Newcastle, whilst Butler and Spenser Grey lost their bearings and had to land—the former at Middlesbrough, and the latter at Jarrow—to inquire their way. Carr also had compass trouble, and landed at Halifax in a rough field, and retired from the race, as previously reported.

Before the last two machines arrived at Newcastle four of the competitors were started on the final stage of the day's journey to Glasgow. These were, in the order of starting, Raynham, Cobham, Barnard and Hamilton. After this the others all got away on time. At 7.45 p.m. Spenser Grey and Kenworthy returned to Newcastle on the Kangaroos, as they decided they would not be able to get to Glasgow before dark. They continued their journey next day, however, and left Glasgow for Manchester in the afternoon. From Manchester they flew direct to Croydon, arriving late in the evening.

Newcastle-Glasgow

This last section was, perhaps, the most exciting of the day, as the leading machines kept very close together. Here also large crowds gathered at Renfrew Aerodrome and waited for the arrivals, whilst some R.A.F. pilots kept them amused with exhibition flights. It was not until 5.19 p.m. that the first man landed. This was Barnard on the D.H.4A, who was received with a great outburst of cheering, and on alighting he was welcomed by Lord-Provost Paxton, Lord Weir, and Sir Hugh Trenchard.

Two minutes later Raynham arrived on his "Martinsyde" having lost the leading position when only 20 miles from Glasgow. The third man in was Cobham, three minutes behind Raynham. Courtney came in fourth at 5.43, and then three D.H.'s arrived in the following order: Piercey (D.H.9) 5.47, Hamilton (D.H.9c) 5.51, and Butler (D.H.37) 6.5.

Two minutes after Butler came Cockerell on the Vulcan, and

then there was a wait of nearly half an hour before the ninth man arrived, this being Longton. Eleven minutes later, and with eleven minutes between them, the two B.P.'s came in, Holmes leading, and Muir hustling in one minute behind them. Nearly an hour elapsed before the brave little Avro Baby and its plucky pilot, Payn, came in last and least.

Glasgow-Manchester

On Saturday morning, out of the 21 machines that started from Croydon, 13 had reached Glasgow, and were ready to make the homeward journey. Raynham, the first starter, was sent off at 9 a.m. in glorious weather, and the others started according to their times, Hamilton being delayed by engine trouble.

At Manchester an exciting race for first in took place between Raynham and Cobham, the former leading at first, only to be beaten at the last moment by a second or two. Barnard came in third, 7 minutes later, and Longton fourth at 11.18. The others followed at intervals of a few minutes in this order: Longton, Piercey, Butler, Hamilton, Courtney, Cockerell, Holmes, Tennant, Muir and Payn—the latter arriving at 1.10. It was greatly regretted by all that Payn was forced to retire at this stage, owing to magneto trouble. Courtney was also obliged to retire, as a centre-section fitting broke shortly after leaving Glasgow. After their one and a half hour's stop the remaining 11 competitors all got well away to time.

Manchester-Bristol

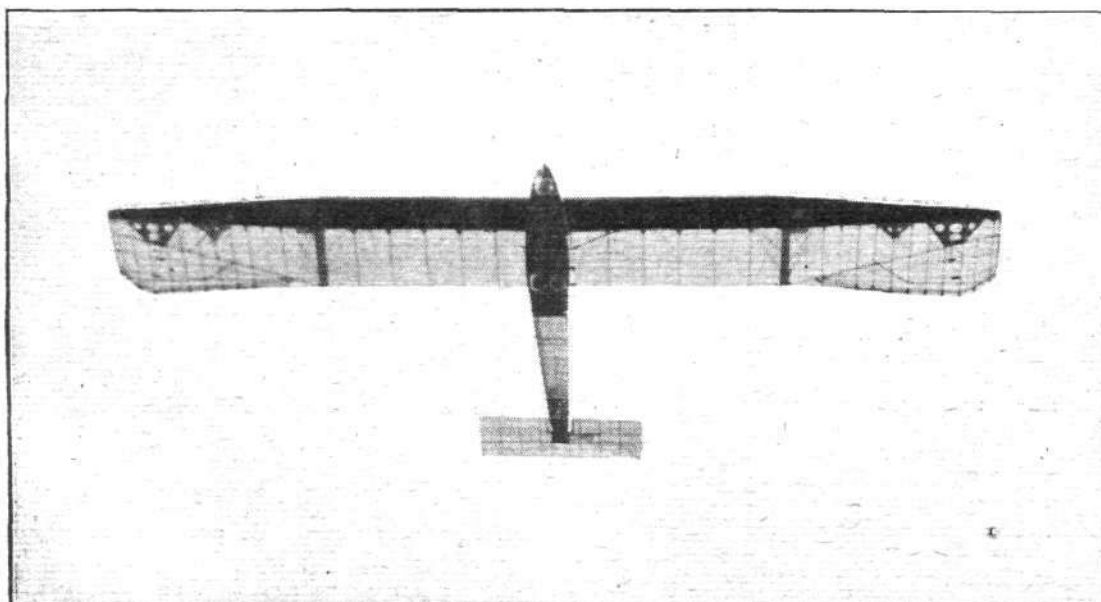
Raynham once again obtained the lead at the end of the second stage, with Barnard only a little over a minute behind. Cobham was next, four minutes later, and Piercey followed in about half an hour. The fifth man, Butler, and sixth, Hamilton, arrived 6 and 17 minutes after respectively, with Longton two minutes behind the latter. In about 12 minutes Cockerell arrived, and after a wait of 27 minutes No. 9, Holmes, came in—his reflection, Tennant, following 15 minutes later. Muir brought up the rear six minutes after. All eleven competitors arrived between 1.21 p.m. and 3.15 p.m., and all got away to time on the final stage to Croydon.

GLIDING, SOARING AND AIR-SAILING

In connection with our Designing Competition, particulars of which were announced in our issue of August 31, the question has been raised what procedure should be adopted by intending competitors who wish to make certain enquiries regarding details of the competition. They should write us in their own name, as later on the designs will be submitted under a *nom de plume*, and the judges will thus not be aware of the identity of competitors. The fact that certain names of possible entrants thus come to our notice can therefore in no way influence the judging of designs submitted.

OWING to the very considerable amount of space occupied by our report of the race for the King's Cup, it has not been possible to include in this week's issue particulars of all the

German gliders which took part in the Rhön competition in Germany. A great deal of descriptive matter, as well as a table of data and several photographs have therefore had to be held over until next week, when we can promise our readers a lot of interesting and valuable information relating to the German machines. In the meantime, we publish this week a photograph of the Hannover glider on which Herr Hentzen made a flight of over three hours. The scale drawings of this machine were published in our issue of August 31, and from the accompanying photograph, taken from underneath the machine, the alterations are fairly clear. Thus it appears that at the tip the trailing edge has been swept back, being now parallel with the leading edge. The span has, we believe, been slightly reduced, but otherwise the machine remains practically as it was in last year's competition.



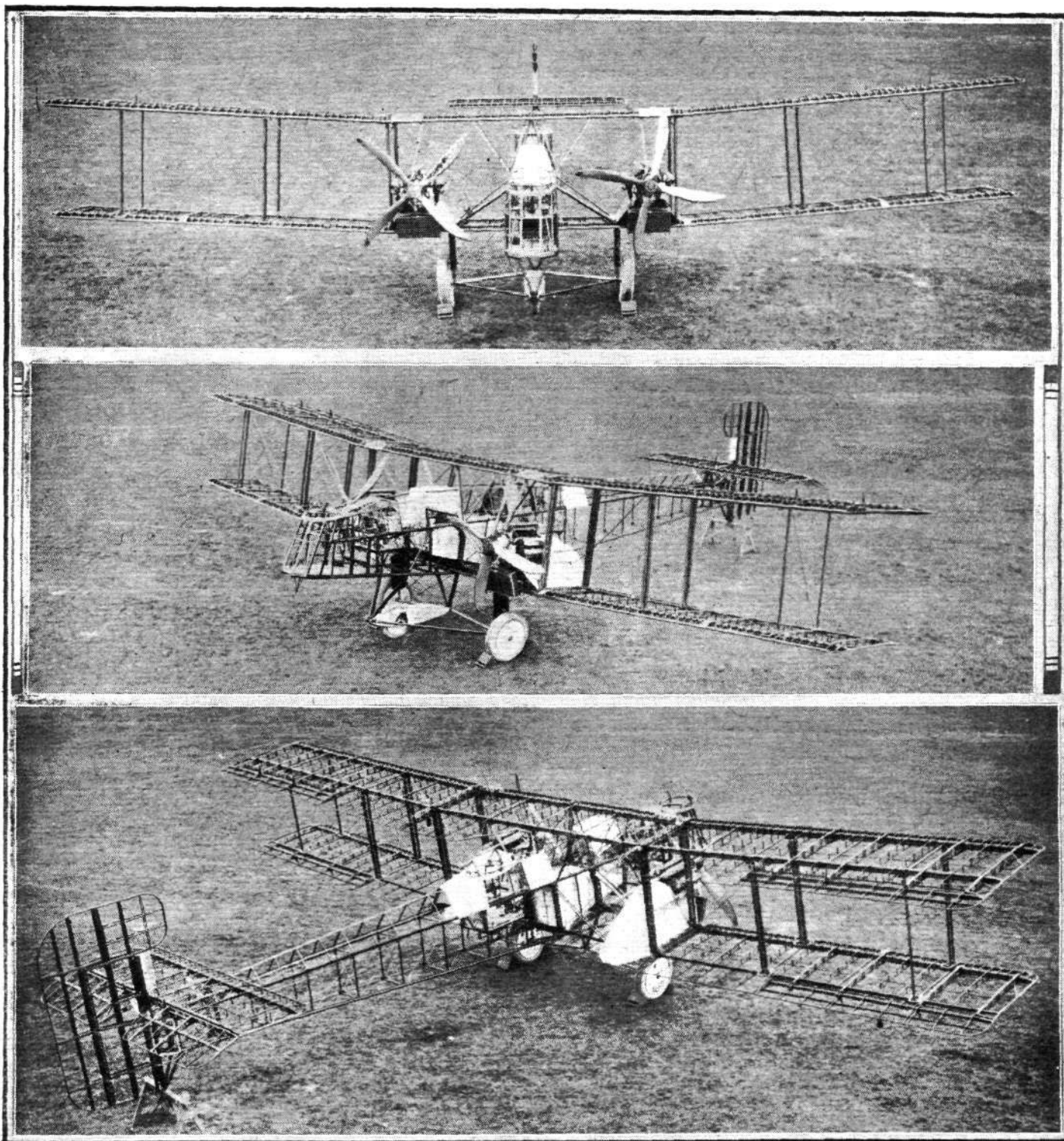
The Hannover Glider "Vampyr," on which Herr Hentzen remained aloft for over three hours.

AIRISMS FROM THE FOUR WINDS

When compared with the experiences and the distances achieved recently by competitors in the Gordon-Bennett Balloon Race, the following extract from *The Times* of August 1, 1822—one hundred years ago—is an interesting and striking contrast:—

"Cheltenham, Tuesday, July 30.—This afternoon at half-past three o'clock, Mr. Green, the aeronaut, with a gentleman named Griffith, made an ascent with a large and very beautiful

balloon, from a yard at the back of the London Hotel in this town, amidst a more numerous assemblage of nobility, gentry, and fashionables, than was ever witnessed in this place on any former occasion. The weather was very favourable, and by three o'clock the balloon was filled, and displayed a most delightful transparent globe, quartered in alternate colours of blue, red and yellow, in size beyond anything ever before seen in England. At half-past 3 o'clock the gentlemen entered



A NEW ALL-STEEL AEROPLANE : Three photographs of the Boulton and Paul "Bolton" (Series number P. 15). The Air Ministry has sanctioned publication of these photographs, but no information relating to the machine may be given beyond such details as are disclosed in the photographs. From these it will be seen that the machine is similar, in general lines, to the Boulton and Paul "Bourges," but the detail construction is, of course, quite different. The power plant, it will be seen, consists of two Napier "Lion" engines.

the car (which was of most costly and elegant structure) apparently in high spirits; they both displayed the utmost coolness and intrepidity. . . . The balloon ascended in the most majestic manner amid the plaudits of thousands. Bets amounting to many thousands of pounds were depending upon the ascent. The course of the balloon was due east; it passed over Northleach and Lord Sherborne's park, and we hear the aerial voyagers descended near that place, after being half an hour in the trackless space."

FOLLOWING this up, on the next day, August 2, 1822, the narrative was continued, and concluded as follows:—

"We inserted yesterday a letter from Cheltenham, giving an account of Mr. Green's ascent, and mentioning that some miscreant had contrived to cut one of the ropes which attached the car to the balloon. The consequence of this rope being cut was, that an arch was formed in the network, which from

the unequal pressure continued to give way several times during the flight. We have to add the following particulars:—

"Within little more than a mile and a half of Salperton, they determined to descend, the car being at that time only upheld by one side of the balloon; their grappling irons came in contact with a wall, into which it was fastened by some country people near the spot, but it was speedily torn away, and they were dragged for a distance of four fields, knocked from hedge to hedge, till at length the balloon carrying them over a large grove up into the air, the car got entangled in a tree, and the inhuman means taken for their destruction proved, under the goodness and mercy of Heaven, the cause of their preservation; the ropes, which had been partly cut, gave way; freed from all control the balloon ascended, and they were flung in Nutgrove-field, from a tremendous height to the ground, Mr. Green insensible and nearly lifeless, and with his companion, lay for some time apparently senseless."

LONDON TERMINAL AERODROME

Monday evening, September 11.

ARRANGEMENTS for the opening of the new British air-lines to Berlin and Cologne are going steadily forward. It is expected that next week will see the start of the Cologne service, while the first section of the London-Brussels route should be opened by October 1.

Owing to the shorter period of daylight some of the late and early services will be altered in time during the week. On Wednesday the Daimler Airway will cancel their 2.30 p.m. service to Paris and the return service leaving Paris at 5.30 p.m., while the 11.30 a.m. from Paris will be changed to 9.45 a.m. The early morning newspaper service, which has been leaving Croydon at 5.30 a.m., will in future depart as soon after dawn as is practicable.

The popularity of "air-taxis" is growing rapidly, and the De Havilland Hire service have now quite a fleet of both three and four-seater "taxiplanes" which are always fully occupied.

Mr. Loader, of the Lep Aerial Travel Bureau, informs me that a Mr. William Ziegler, who had hired an "air-taxi" to fly him to Vienna, was so pleased with the trip that he extended his air tour to Trieste, Venice, Rome, Milan and Lyons, the "air taxi," which was piloted by Mr. Barnard, of De Havillands', landing him at Le Havre, where he caught a liner for America.

Mr. Young, one of the K.L.M. mechanics, accompanied Lieut.-Col. Tennant in his P.g. in the round-Britain air race, and his particular job was to see that there was plenty of petrol in the tank while the machine was in flight. It appears that the tanks of this machine did not hold sufficient petrol to complete some of the stages, and Mr. Young carried in his seat several two-gallon tins of petrol, which he poured into the tank while in flight. He tells me that this was a ticklish business, especially over the Lake district, where it was extraordinarily bumpy.

Mr. Bradley had an amusing adventure with a herd of bullocks, when he was compelled to alight at an old German aerodrome, about 30 miles out from Brussels, owing to bad weather. When he had "taxied" up to one corner of the aerodrome the bullocks made a rush for his machine and, evidently inspired by curiosity, commenced to nose round the machine. Before Mr. Bradley could drive them away, one of them had stuck his horns through the wing, and another had performed a similar action on the tail. They were driven off before any further damage was done, but when the weather cleared, and Mr. Bradley started to "take off," they again caused trouble by following the machine round the aerodrome as he tried to get into position head-to-wind.

The facilities that were embodied in the design of the D.H.34's for carrying spare engines were brought into use during the week by the Daimler Airway. One of their machines, when it arrived at Paris, was found to have developed engine-trouble, and it was decided to install a new engine. As there was no spare engine in Paris a wireless message was sent to Croydon, and a new engine was loaded

into one of the 34's. The peculiar shape of the door allows this to be done with ease. In fact, it was for this particular purpose that the door was made that shape, while on the opposite side of the cabin is a removable port which allows the propeller boss to project out of the machine, thus allowing the entire engine to rest across the cabin.

The engine was flown over to Paris in 2 hours 10 minutes, and was installed, ready for the machine to return, by the following day.

The K.L.M. are now running a single service in each direction daily between London and Amsterdam, and are making increasing use of the Rolls-Fokkers.

A Joy-Riding "S.O.S." from Rotterdam

I AM informed that the aviation meeting at Rotterdam is attracting a large crowd of people who are desirous of making aerial "joy-rides," and that the K.L.M. machines took over 1,000 of these up in the course of a day or two. In fact, they were unable to cope with the demands of joy-riders, and sent telegrams to the British firms at Croydon asking if they would send over machines to give a hand with this rush. Owing to the demands of the regular services, however, it was found impossible for any of the companies to spare a machine. So it is possible that the German commercial machines at this meeting will be doing good business in this direction.

The Sports' Club have acquired a new site for their football ground, and had it all laid out for the opening match of the season on the 2nd inst. The ground is alongside the wireless hut, and, in spite of a slight ridge in the centre, running from goal-post to goal-post, is the best in the neighbourhood.

The Football club is now going strong, having won their first two matches. There seems to be far more enthusiasm for football than for cricket on the aerodrome, and the club seems assured of a successful season, with plenty of players to choose from.

Mr. Cogni, the general manager of Handley Page Transport, has returned from a motoring holiday, and tells me that he had the greatest difficulty in getting away from "shop." Not only was he pursued by letters and telegrams, but his companion would insist on talking "shop." Next year Mr. Cogni intends to travel to some unknown destination on the continent, and to go alone.

Handley Page Transport continue to carry good loads of both passengers and freight on all their services, and are getting ready for the rush of traffic when they become the only British service on the London-Paris route.

With the prevailing wind from the north the aerodrome has again been shrouded in mist most mornings during the week. On one particular day machines were arriving, and circling round overhead, entirely hidden from those on the ground by the mist. The aerodrome officials were anxious as to the ability of the pilots to see where they were; but the machines alighted quite as usual, the pilots declaring that, though they themselves were invisible from the earth, they could see down through the mist quite distinctly.

Aero Golfing Society

THE first Autumn Meeting of the Aero Golfing Society will be held, by the kind permission of the St. George's Hill Golf Club, on the latter's links at Weybridge on Wednesday, September 20. In the morning there will be the Medal Round for the Aero Golfing Society Autumn Challenge Cup (presented by Cellon, Ltd.). Runner-up, prize from the Society. The afternoon will be devoted to Bogey Foursomes: 1st prizes presented by Mr. C. R. Fairey, 2nd

prizes from the Society. Members may select their partners for the Bogey Foursomes, and it is understood they play together in the Medal Round in the morning. Couples fixing up should notify the Secretary beforehand. Members requiring partners should also notify the Secretary. The first couples will tee off at 10 o'clock.

The Committee has decided that this being the first meeting of the Society an Informal Dinner shall be held at the Royal Aero Club on the evening of the meeting. Price 5s. each.

THE ROYAL AIR FORCE

London Gazette, September 5, 1922

General Duties Branch

The following are granted short service commns. as Pilot Officers on probation, with effect from, and seny. of, Aug. 21:—J. O. Barnes, C. A. Cole, C. E. N. Guest, G. G. Hopkins, A. Malone, D. G. Pinnell, A. M. Rowe, F. R. D. Swain. Flying Officer R. L. McK. Barbour, D.F.C., is placed on half-pay, Scale B, from August 30 to September 8, inclusive. Flying Officer L. G. Harrison is transferred to Reserve, Class C September 4. Flying Officer J. E. Arnott relinquishes his short service commn. on account of ill-health and is permitted to retain the rank of Lieut., September 6. Flying Officer A. W. Scott (Sub-Lieut., R.N.) relinquishes his temp. commn. on retirement from R.N.; August 8. The short service commn. of Flight. Lieut. R. M. Bankes-Jones is terminated on appt. as Chaplain; September 7.

Medical Service

D. J. Jones, M.B., is granted temp. commn. as Flight Lieut., with effect from, and seny. of, August 21. Flight Lieut. J. C. Smyth is transferred to Reserve, Class D 2, August 26.

Chaplains' Branch

The Rev. R. M. Bankes-Jones is granted short service commn. with relative rank of Squadron Leader, for purposes of precedence, administration and discipline; September 7. The Rev. H. Marshall, M.A. resigns his perm. commn.; September 7.

London Gazette, September 8, 1922

Wing Commander G. Laing, O.B.E., is appointed Deputy Director of Equipment, Class 2, Air Ministry (August 1).

General Duties Branch

Wing Commander T. O. Lyons, O.B.E., is placed on half-pay, scale A, (September 6). Flight Lieutenant P. G. N. Ommanney is placed on half-pay, scale B, for six months from August 11.

Stores Branch

Flying Officer S. H. Atherly is dismissed the service by sentence of General Court Martial (August 19).

NOTICES TO AIRMEN

Holland : Height of Flight

1. The Netherlands Government have amended as follows the regulations as to the height of flight over inhabited areas in Holland:—The minimum height of flight over closely inhabited areas is 400 metres (1,312 ft.), but aircraft must always fly at such a height over towns or public gatherings as will permit of their landing outside such areas in case of engine failure. No trick flying may be carried out above closely inhabited areas or public gatherings."

2. *Previous Notices.*—Para. 1 of Notice to Airmen No. 138 of 1920 is hereby cancelled.

(No. 96 of 1922.)

France : Marseille Aerodrome

THE following is now available:—*Marseille (Marignane).* Civil Customs Aerodrome.

Position.—Lat. 43° 26' N., Long. 5° 13' E. Situated on

the S.E. side of the "Etang de Berre," 2 kms. N. of Marignane and 21 kms. N.W. of Marseille.

Dimensions for landing.—500 × 400 metres (to be increased later).

Markings.—A circle with the name "Marseille" is marked on the ground.

Accommodation, Etc.—Hangars and supplies, but no repair facilities, are available.

Telephone.—A telephone has been installed—No. Marignane 20.

Note.—This aerodrome is designed as a combined aerodrome, seaplane base, and airship station. Seaplanes can alight on the adjoining lake. One seaplane shed is at present available, and a slipway is under construction.

Further particulars regarding the seaplane and airship facilities will be notified as they become available.

(No. 98 of 1922.)

Personals

Married

Flight-Lieut. LOUIS HENRY PAKENHAM-WALSH, D.F.C., R.A.F., third son of the late Louis Henry Pakenham-Walsh, "Old Vicarage," Neston, Cheshire, was married on August 9 at St. Andrew's Church, Uxbridge, to DOROTHY EVA, eldest daughter of Mr. and Mrs. W. R. GREVES, "Laurenny," Bourne End, Bucks.

To be Married

A marriage has been arranged, and will shortly take place, between Maj. HERBERT G. BRACKLEY, D.S.O., D.S.C., R.A.F. (Lieut.-Commander, attached I.J.N.), eldest son of Mr. and Mrs. Brackley, of Harringay, and FRIDA H. MOND,

elder daughter of Mr. ROBERT MOND, J.P., of Combe Bank, Sevenoaks, and of 50, Wimpole Street, W., the elder brother of Sir Alfred Mond. Maj. Brackley joined the R.N.A.S. in June, 1915, at the age of 19, and a month later took his pilot's certificate. The following year he was in command, at Dunkirk, of a Handley Page bombing squadron which alone dropped 540 tons of bombs on enemy objectives. His conspicuously good work as pilot won him both the D.S.C. and the D.S.O. in 1917. On one occasion Maj. Brackley returned from a bombing flight with forty holes in his machine. Maj. Brackley was one of the heroes of the Handley Page Transatlantic flight in 1919.

ROYAL AERONAUTICAL SOCIETY

"R.38" *Memorial Research Fund.*—The following donations to the "R.38" Memorial Research Fund have been received since the publication of the last list:—Officers, R.A.F., Peshawar, £7 5s. 2d., Capt. E. G. Walker £2 5s., and the Officers on the Staff of the British Aviation Mission, Japan, £20, bringing the total amount received to £1,240 12s. 10d.

Library.—The following book has been received and placed on the Library shelves:

"A Dictionary of Applied Physics," Vol. 11, Electricity. W. LOCKWOOD MARSH, Secretary.

A Spad 58 for Coupe Deutsch

AMONG the French entries for the Coupe Deutsch is one which in the official announcement of the entries is styled Bleriot-Casale. Some speculation has been caused as to the design of this machine, and our readers will therefore probably be interested to learn that the racer is a Spad-Herbemont, similar in all respects to the "Monoplace de Chasse, Spad 41," with the exception that the engine is one of the new 12-cylinder "broad arrow" type 450 h.p. Lorraine-Dietrichs. The racing machine is, we believe,

known as the Spad 58. Owing to the absence of armament, etc., the total weight has been considerably reduced, so that with an increase of 50 per cent. in horse-power the new machine should be very fast.

In its general lines the machine is a typical Spad-Herbemont, having the characteristic single interplane struts, back-swept top plane, and monocoque Tulip wood fuselage. The whole of the wings, however, with the exception of the fabric covering, is built of metal, Duralumin being used for the spars, ribs, inter-plane struts, etc., and steel for such fittings as wiring plates, etc. The undercarriage also is all-metal, with all joints pin-jointed so as to avoid heavy bending stresses under deformation.

The main characteristics of the Spad 58 are: Length, 21 ft. 3 ins. Span, 28 ft. 1 in. Chord, 5 ft. 4 ins. Height, 9 ft. 2 ins. Wing area, 278 sq. ft. Weight loaded, 2,530 lbs. Wing loading, 9.1 lbs./sq. ft. Power loading, 5.7 lbs./h.p.

Cairo-Baghdad Air Mail

THE Postmaster-General announces that the air mail for Baghdad which left London on August 24 reached Baghdad on September 2. The air mail for London which left Baghdad on September 2 reached Cairo the next day, and should arrive in London about Monday next.

The next air mail for Baghdad will leave London on Thursday, September 21.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association.)

At the Meeting held on Thursday, the 7th inst., at Headquarters, important business was carried out.

In future meetings will be held on Fridays at 7.30 p.m. instead of Thursday as heretofore.

An important discussion was held with reference to fuselage models. It was decided, in order to define fuselage models as distinct from freak models, to settle upon a formula giving a definite minimum ratio of between maximum cross section of fuselage and its length. All machines having a smaller ratio than this will, in future, not be considered fuselage models, either for the purpose of competition or record breaking.

The formula eventually decided on is as follows:—

Length of body in inches = Minimum Area of maxi-

mum cross section in square inches. Mr. Felix Kelly's Challenge Cup for best duration in a single flight by compressed-air-driven model aeroplane will be competed for on Wimbledon Common, Saturday next, the 16th inst., at 5 p.m. punctual. Members who are not competing are specially requested to give a demonstration with their ordinary models for the edification of the general public.

An Extraordinary General Meeting will be held at Headquarters, 20, Great Windmill Street, Piccadilly Circus, W. 1, on the first Friday in October, at 7.30 p.m., for the purpose of electing officers for the ensuing twelve months, and other business. Hon. Secretary: A. E. Jones, 48, Narcissus Road, West Hampstead, N.W. 6.

SIDE-WINDS

IN connection with the King's Cup Race, over a distance of 810 miles around Britain, it is of interest to note that the winner, Capt. Barnard, ascribes much of his success to the perfect functioning of his compass. This is designed on a principle patented by Dr. Bennett, and is made by Hughes, S. Smith and Sons (M.A.), Ltd., of Cricklewood, being the sole concessionaires for Great Britain. In a race such as the Circuit of Britain a good compass is a most valuable companion, and the consistently good flying of Barnard seems to indicate that he must have flown a most excellent course. With regard to the other machines in this race, we were not able to make a definite list of those which carried Smith's instruments, but from rapid glances into a great number of cockpits we certainly received the impression that a very large percentage of instrument boards showed the well-known black dials.

CAPT. BARNARD'S Rolls-Royce "Eagle" engine, which pulled him through to victory, ran, we learn, without a hitch throughout the 810 miles' race. That was to be expected, of course, but the fact that the engine was running on "Shell" Aviation Spirit may have had something to do with it. Another aerial triumph added to the long list of "Shell" achievements. The "Eagle" was, we learn, running full throttle most of the time, and at a full throttle of 1,930 r.p.m. at that, which is 130 r.p.m. above the normal speed for which it was designed. Yet at the end of the race there was no sign of engine trouble, and the "Eagle" seemed fit to do the whole trip a second time.

THE D.H.4A, winner of the King's Cup, was, we learn, doped with "Cellon," as was also Raynham's Martinsyde F.6. The yellow and black colour scheme of the latter is very distinctive, and was chosen by Raynham after examining the large range of colours which are available with the Cellon doping schemes. Incidentally it is of interest to learn that Cellon (Richmond), Ltd., always well to the fore in anything new, have produced a special dope for gliders. Anyone interested should apply to Cellon (Richmond), Ltd., 22, Cork Street, London, W.1, for particulars and prices.

THE record of the Daimler Airways' D.H.34 keeps going up. This machine has now completed a distance of over 80,000 miles during a period of four months, which speaks volumes not only for the machine, but also for its Napier Lion engine.

THE Schneider Cup Race at Venice, which was won by Capt. Biard on a Napier-engined Supermarine flying boat, was flown in almost unbearably hot weather, so much so that all the pilots were in fear of getting sunstroke. The problem of adequate cooling of the engine was therefore a difficult

one, but we learn that the Serck radiator with which the Napier "Lion" was fitted functioned excellently, and that never during the race, in spite of the strenuous conditions, did the engine show signs of overheating. Serck Radiators have already made their name a household word in the motoring world, and the performance of the radiator fitted on the "Lion" seems to indicate that on aircraft also Serck is, literally, well ahead.

※ ※ ※ ※

PUBLICATIONS RECEIVED

The Professional Photographer. September, 1922. Kodak, Ltd., Kingsway, London, W.C. 2.

Technical Note No. 106. Notes on Aerodynamic Forces—III. The Aerodynamic Forces on Airships. By Max M. Munk. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Report No. 126. Aeronautic Instruments, Section II. Altitude Instruments. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Report No. 132. Aeronautic Instruments, Section VIII. Recent Developments and Outstanding Problems. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

※ ※ ※ ※

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motors. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1921

Published September 14, 1922

- 4,651. E. R. CALTHROP. Aerial craft. (184,499.)
- 10,057. ZEPPELINWERK LINDAU GES. and C. DORNIER. Aeroplanes. (161,948.)
- 13,448. MAYBACH MOTORENBAU GES. Carburettors. (163,305.)
- 13,897. E. A. GOLLE. I.C. engines with rotating cylinders. (184,579.)
- 16,129. G. HRIB. Driving-gear for horizontal propeller for aeroplanes. (184,630.)
- 20,024. R. W. DAVIS. Aeronautical screw propellers. (184,678.)
- 21,358. O. PIERING. Flying-machines of the flapping-wing type. (184,690.)
- 21,449. J. V. RISE, JUN. I.C. engines for aeroplanes, etc. (184,691.)
- 23,584. W. R. BOWKER. Aeronautical appliance for transporting and firing explosives. (184,706.)

If you require anything pertaining to aviation, study "FLIGHT's" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages iii and xx).

NOTICE TO ADVERTISERS

All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C.2, not later than 12 o'clock on Saturday in each week for the following week's issue.

FLIGHT

The Aircraft Engineer and Airships

36, GREAT QUEEN STREET, KINGSWAY, W.C. 2.

Telegraphic address: Truditur, Westcent, London.
Telephone: Gerrard 1828.

SUBSCRIPTION RATES

"FLIGHT" will be forwarded, post free, at the following rates:—

UNITED KINGDOM			ABROAD*		
	s.	d.		s.	d.
3 Months, Post Free...	7	7	3 Months, Post Free...	8	3
6 " " " "...	15	2	6 " " " "...	16	6
12 " " " "...	30	4	12 " " " "...	33	0

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates.

* European subscriptions must be remitted in British currency

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring "FLIGHT" from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.